WHAT IS CLAIMED IS:

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1. In a network supporting packet multicasting from a sender into the
2 network, where hosts join and leave a multicast group by sending join and leave
3 messages, respectively, to an access device in the network, an improvement comprising:
4   a plurality of layers, wherein a layer is a logical channel that carries packets for the
5   multicast group;
6   logic for distributing multicast traffic from the sender over the plurality of layers
7   according to a sending rate associated with each of the plurality of layers;
8   logic for accepting join and leave messages at the access device from the hosts,
9   wherein the join and leave messages are associated with one or more layers of
10   the plurality of layers; and
11   logic for reducing the aggregate sending rate of the plurality of layers over time.

1   2. The network of claim 1 further comprising logic for raising the sending
2 rate of an unused layer.

1   3. In a network supporting packet multicasting from a sender into the
2 network, where hosts join and leave a multicast group by sending join and leave
3 messages, respectively, to an access device in the network, a method comprising the steps
4 of:
5   accepting multicast join messages at the access device, wherein a join message
6   indicates that a host beyond an interface to the access device requests
7   membership in a layer, where a layer is a logical channel over which packets are
8   multicast to hosts that are members of a multicast group for the layer;
9   transmitting multicast packets to a plurality of layers, wherein multicast packets are
10   transmitted by the sender on a given layer at a rate approximately equal to a
11   sending rate associated with the layer;
12   accepting multicast leave messages at an access device from hosts, wherein a leave
13   message indicates that a host requests removal from a layer indicated in the leave
14   message; and
15   reducing the aggregate sending rates for each of the layers over time, thereby
16   reducing a reception rate of a host that is joined to a fixed set of layers.

Sub A5 7

1   4. The method of claim 3, further comprising a step of offsetting a
2   reduced aggregate reception rate at a host due to a reduced aggregate sending rate at the
3   sender by the host joining additional layers, if a reception rate at the host is to be
4   maintained.

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